

# SOME STRONGYLE NEMATODES (*AMIDOSTOMUM* SPP.) FROM AUSTRALIAN BIRDS

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## Summary

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*Amidostomum acutum* is recorded from *Anas superciliosa*, *A. platyrhynchos*, *Sitotmetta naevosa*, *Querquedula gibberifrons*, *Tadorna radjah* and *Himantopus leucocephalus*. *A. anseris* from *Cereopsis novaehollandiae*; *A. cygni* from *Cygnus atratus*; *A. biziuræ* from *Bizuræ lobata*. Measurements of most specimens examined and morphological notes on *A. cygni* and *A. biziuræ* are given. A new species, *A. tribonyx*, close to *A. acutum*, but distinguished by shorter spicules and very large cervical papillae, is described from *Tribonyx ventralis*.

## Introduction

Nematodes of the genus *Amidostomum* appear to be restricted to waterfowl; almost all records are from anseriform and ralliform birds, and a few from charadriiform birds. The genus was studied in some detail by Czaplinski (1962). Of the 16 species then recorded, he synonymised 11. Four species have been described subsequently.

In the present work three of the species recognised by Czaplinski are identified from Australian birds, one species he considered a synonym is resurrected and a new species is described.

Measurements of specimens examined are tabulated, but those indicating the position of nerve ring, cervical papillae and excretory pore are omitted in some cases. These structures, especially the first two, are particularly obscure in some species. The new species is noteworthy because of the unusually large cervical papillae.

Types of the new species will be deposited in the South Australian Museum, and all other material belongs to the Australian Helminthological Collection at present in the South Australian Museum.

### *Amidostomum acutum* (Lundahl)

*Strongylus acutus* Lundahl, 1848.

*Hosts and localities*: *Anas superciliosus* Gmelin: Hamley Bridge S.A. (2 ♂), Westbury, Tas. (24 ♂, 18 ♀); *A. platyrhynchos*, Flinders I., Tas. (1 ♂, 1 ♀); *Sitotmetta naevosa* (Gould), Boof Lagoon, S.A. (2 ♂); *Querquedula gibberifrons* S. Müller, Naracoorte, S.A. (1 ♂); *Querquedula* sp., Adelaide, S.A. (1 ♂); *Tadorna radjah* Garnot, Humpty Doo, N.T. (1 ♂); *Himantopus leucocephalus* Gould, Petermann Ra., N.T. (1 ♂, 2 ♀).

In his work on *Amidostomum*, Czaplinski (1962) gives a good account of *A. acutum*, and referred a number of species to its synonymy. Except for *A. biziuræ* Johnston & Mawson, this synonymy has been adopted here. Reasons for this exception are given in the account of *A. biziuræ*.

Measurements of specimens from *Anas superciliosus*, which are most numerous and in good condition, are given in Table 1.

### *Amidostomum anseris* (Zeder)

#### FIG. 2

*Strongylus anseris* Zeder, 1800.

*Host and locality*: *Cereopsis novaehollandiae* Latham, from Flinders I., Tas. (5 ♂, 7 ♀).

These specimens agree generally with the description, figures and measurements given by Czaplinski in his summary of the species. The only (and slight) difference is that the anterior lip of the vulva, and in two specimens both anterior and posterior lips, are enlarged (Fig. 2). Czaplinski describes this region as "vulva provided with conspicuous hemispherical bulge". Measurements of these specimens are given in Table 1.

### *Amidostomum biziuræ* Johnston & Mawson

#### FIG. 1

*Amidostomum biziuræ* Johnston & Mawson, 1947.

*Host and localities*: *Bizuræ lobata* (Shaw) from Goolwa, S.A. (3 ♂, 2 ♀), Barren Box Swamp, N.S.W. (5 ♂, 5 ♀).

This species, originally described from one female, was redescribed from new material of both sexes (Mawson 1959). The specimens recorded here from the type host species and new localities agree with this description.

Czaplinski (1962) placed *A. biziuræ* in the synonymy of *A. acutum*, apparently not having seen this redescription. However, he discounted the projections around the mouth,

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TABLE 1. *Measurements of Amidostomum spp. recorded here ( $\mu\text{m}$  unless otherwise stated).*

Species	<i>A. acutum</i>		<i>A. cygni</i>	<i>A. anseris</i>	<i>A. tribonyx</i>
	<i>Anas superciliosus</i>	<i>Himantopus leucocephalus</i>	<i>Cygnus atrata</i>	<i>Cereopsis novaehollandiae</i>	<i>Tribonyx ventralis</i>
Male (number)	(5)	(1)	(2)	(4)	(3)
Length (mm)	9.2-11.4	7.2	15-17	12.3-15.5	7.6-9.7
Oesophagus rods occupy	640-760		1280-1500 90-95%	1450 99%	650-856 81-84%
A—nr	250-300		350-400	260-280	240-250
—cp	360-410		520-600	350-400	280-350
—exp	300-420		520-600	320-340	—
spicules	130-140	140	190-200	280-312	100-110
gubernaculum	60-70	80	105-110	110-115	30
bucc. caps: length	9	8	12-13	15-16	10
ext. diameter	11-12	13	35	31-35	18-19
Female (number)	(5)	(2)	(2)	(4)	(3)
Length (mm)	13.5-17.0	13.6-13.7	22.0-22.1	19.5-21.0	7.6-10.0
Oesophagus rods occupy	760-850		1250-1550 96%	1420-1650 99%	650-730 84-86%
A—nr	250-300		350-390	350-390	210-240
—cp	300-400		500-550	500-550	300-310
—exp	300-490		500-505	505-550	—
bucc. caps: length	10-11	9	15-16	15-16	10-12
ext. diameter	12-16	17-18	36-40	36-41	18-22
tail	250-280	250-260	250-260	240-330	220-300
vulva—posterior end (mm)	2.4-2.8	2.7-2.8	3.8-3.9	2.7-3.1	1.8-2.5
eggs—L	80-90	91-95	89-90	90-95	90-95
—Br	50-51	42-45	50-51	45-55	50-52

regarded by the authors as one of the main specific characters, as being enlarged labial papillae. In fact these are not labial papillae, but euticular structures, containing no nerve or other hypodermal tissue. The four labial papillae and two amphids are seen behind the projections (Mawson 1959, figs 4-5). The projections are obvious on all specimens, and arise in association with the anterior edge of the buccal capsule.

The other striking feature of the species is the embossed euticular annules, which appear on all specimens, and have not been seen in any other species. A more detailed figure is given of the spicules.

#### *Amidostomum cygni* Wehr

FIGS 3-5

*Amidostomum cygni* Wehr, 1933.

*Host and locality:* *Cygnus atratus* Latham, Adelaide, S.A. (13 ♂, 16 ♀).

This species was re-recorded from *C. atratus* (syn. *Chenopsis atrata*) from Taillem Bend, S.A. by Johnston & Mawson (1947), but that material did not include the posterior end of a male. The present material is more plentiful and a closer study has been made.

The measurements (Table 1) are generally larger than those given by Wehr (1933) or by

Ryzhikov (1959). Czaplinski (1962) regards *A. similis* Freitas & Mendonca (1954) from a South American swan a synonym of *A. cygni*: the only difference being in the greater size and in that the authors noted three instead of two (Ryzhikov) branches to each spicule. Wehr simply states that the spicule is "similar in shape to those of other species of the genus". In the Australian specimens there are three branches, one much shorter and thinner, the other two lying close together except at the tips where one ends bluntly, the other is splayed out. In the expanded state all branches support a membranous structure which appears to be globular rather than fan-shaped (Fig. 4).

#### *Amidostomum tribonyx* sp. nov.

FIGS 6-10

*Host and localities:* *Tribonyx ventralis* Gould, from Swan Reach (3 ♂, 3 ♀), and Taperoo (1 ♂, 1 ♀), S.A.

*Holotype male*, SAM, V1864. Allotype female, SAM, V1865.

Lateral alae absent, buccal capsule stoutly built, with single, dorsal tooth reaching almost to anterior edge of buccal capsule. Oesophagus widens slightly posteriorly. Cervical papillae prominent euticular projections.

Male: Spicules bifid, each branch alate, rounded at distal end, the more ventral branch

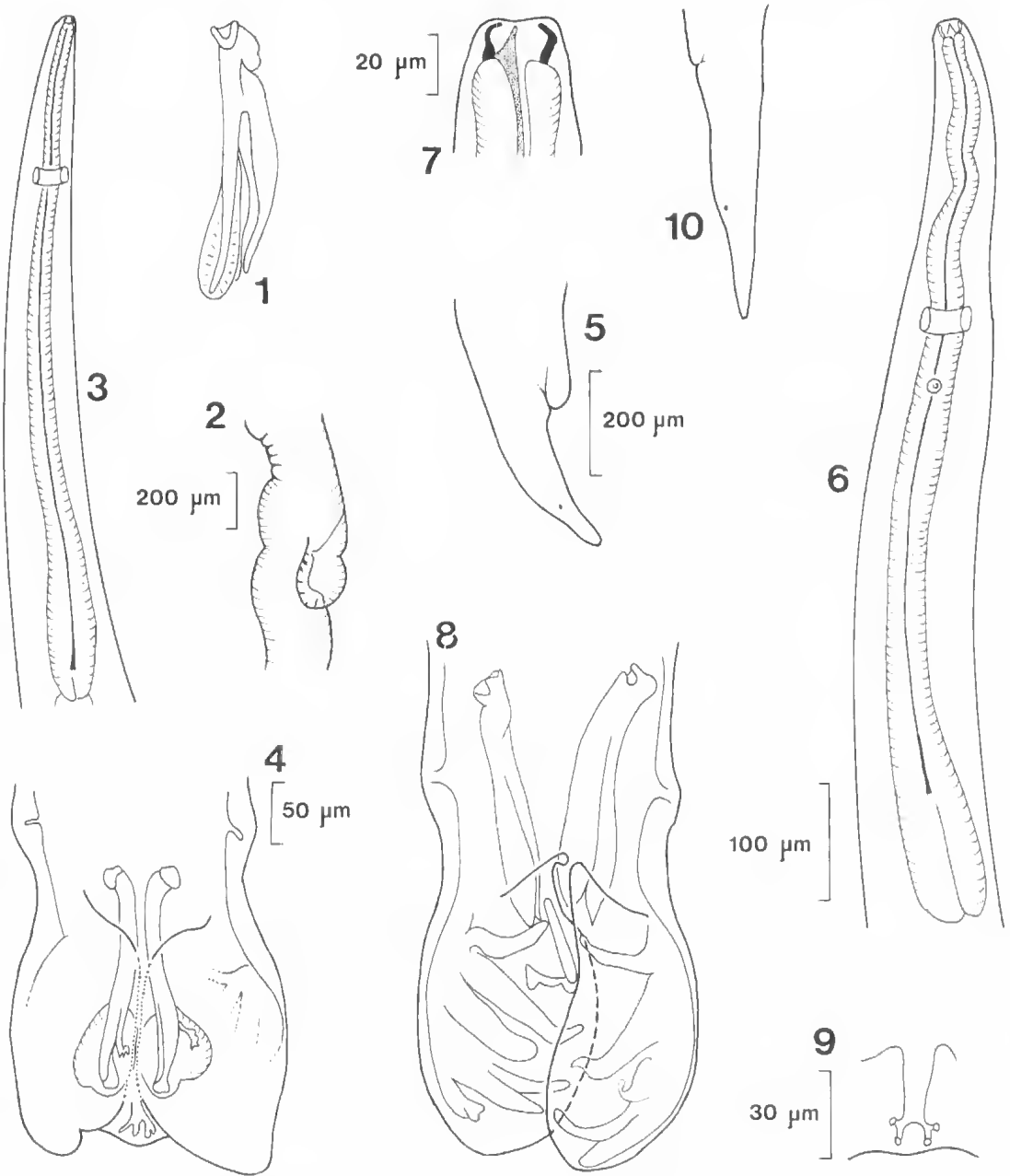


Fig. 1. *Amidostomum biziurae*, spicule.

Fig. 2. *A. anseris*, vulvar region.

Figs 3-5. *A. cygni*. Fig. 3, anterior end; Fig. 4, posterior end showing spicules partly everted; Fig. 5, posterior end of female.

Figs 6-10. *A. trihonyx*. Fig. 6, anterior end; Fig. 7, head; Fig. 8, bursa, ventral view; Fig. 9, dorsal ray; Fig. 10, posterior end of female.

Figs. 1, 8 & 9 to same scale; Figs 3 & 5 to same scale; Figs 4 & 10 to same scale.

slightly longer. Gubernaculum poorly sclerotized, about  $\frac{1}{4}$  length of spicules. Bursal rays typical of genus ( Figs 8 & 9).

Female: Tail widens about midlength, at level of phasmids, then narrows to rounded tip. Vulva at about  $\frac{1}{4}$  body length from posterior end, with swollen anterior lip.

This species differs from *A. acutum* in the smaller spicules and gubernaculum, and from

all congeners by the large cervical papillae. Measurements are included in Table 1.

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